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New set of claims

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1. A fuel injection apparatus for an internal combustion engine (10) which performs a direct injection operation for injecting fuel from an injector for cylinder injection (33) into a cylinder and a port injection operation for injecting fuel from an injector for intake port injection (31) into an intake port (13), characterized in that

when a request to change a fuel injection mode from a mode of fuel injection from the injector for cylinder injection (33) to a mode of fuel injection from the injector for intake port injection (31) is made, the fuel injection mode of a particular cylinder is changed at a point of time according to the request to change the fuel injection mode for the particular cylinder.

2. The fuel injection apparatus for an internal combustion engine (10) according to claim 1, characterized in that

in the case where the request to change the fuel injection mode is made before the fuel injection mode is set to a port injection mode, the fuel injection mode is changed to the mode of fuel injection from the injector for intake port injection (31) simultaneously with the request to change the fuel injection mode.

3. The fuel injection apparatus for an internal combustion engine (10) according to claim 1, characterized in that

in the case where the request to change the fuel injection mode is made during a period after the port injection mode is set and before a direct injection mode is

set, when a requested port injection mode is an intake synchronous injection mode, the fuel injection mode is changed to the mode of fuel injection from the injector for intake port injection (31) simultaneously with the request to change the fuel injection mode, and when a requested port injection mode is an intake non-synchronous injection mode, the fuel injection mode is changed to the mode of fuel injection from the injector for intake port injection (31) after one cycle has elapsed since the request to change the fuel injection mode is made.

4. The fuel injection apparatus for an internal combustion engine (10) according to claim 1, characterized in that

in the case where the request to change the fuel injection modes is made after the port injection mode and the direct injection mode are set, the fuel injection mode is changed to the mode of fuel injection from the injector for intake port injection (31) after one cycle has elapsed since the request to change the fuel injection mode is made.

5. A fuel injection apparatus for an internal combustion engine (10) according to claim 1, wherein

when a fuel injection mode is changed from a mode of fuel injection from the injector for cylinder injection (33) to a mode of fuel injection from the injector for intake port injection (31), the fuel injection mode is set to an intake synchronous injection mode until an amount of fuel adhering to a wall surface of the intake port (13) due to port injection becomes stable.

6. A fuel injection control method for an internal combustion engine (10) which performs a direct injection operation for injecting fuel from an injector for cylinder injection (33) into a cylinder and a port injection

operation for injecting fuel from an injector for intake port injection (31) into an intake port (13), characterized in that

when a request to change a fuel injection mode from a mode of fuel injection from the injector for cylinder injection (33) to a mode of fuel injection from the injector for intake port injection (31) is made, the fuel injection mode of a particular cylinder is changed at a point of time according to the request to change the fuel injection mode for the particular cylinder.

7. The fuel injection control method for an internal combustion engine (10) according to claim 6, characterized in that

in the case where the request to change the fuel injection mode is made before the fuel injection mode is set to a port injection mode, the fuel injection mode is changed to the mode of fuel injection from the injector for intake port injection (31) simultaneously with the request to change the fuel injection mode.

8. The fuel injection control method for an internal combustion engine (10) according to claim 6, characterized in that

in the case where the request to change the fuel injection mode is made during a period after the port injection mode is set and before a direct injection mode is set, when a requested port injection mode is an intake synchronous injection mode, the fuel injection mode is changed to the mode of fuel injection from the injector for intake port injection (31) simultaneously with the request to change the fuel injection mode, and when a requested port injection mode is an intake non-synchronous injection mode, the fuel injection mode is changed to the mode of fuel injection from the injector for intake port injection

(31) after one cycle has elapsed since the request to change the fuel injection mode is made.

9. The fuel injection control method for an internal combustion engine (10) according to claim 6, characterized in that

in the case where the request to change the fuel injection modes is made after the port injection mode and the direct injection mode are set, the fuel injection mode is changed to the mode of fuel injection from the injector for intake port injection (31) after one cycle has elapsed since the request to change the fuel injection mode is made.

10. A fuel injection control method for an internal combustion engine (10) according to claim 6, wherein

when a fuel injection mode is changed from a mode of fuel injection from the injector for cylinder injection (33) to a mode of fuel injection from the injector for intake port injection (31), the fuel injection mode is set to an intake synchronous injection mode until an amount of fuel adhering to a wall surface of the intake port (13) due to port injection becomes stable.